APPENDIX A

FEDERAL COORDINATION AND PLANNING

BASIS FOR FEDERAL COORDINATION PROCESS

In 1963, Congress and the Executive Office of the President expressed concern about the adequacy of coordination of federal meteorological activities. In response, Congress directed in Section 304 of Public Law 87-843--the Appropriations Act for State, Justice, Commerce, and Related Agencies--that the Bureau of the Budget prepare an annual horizontal budget for all meteorological programs in the federal agencies.

The Bureau of the Budget (now the Office of Management and Budget) issued a report entitled "Survey of Federal Meteorological Activities" (1963). The report described each agency's program in some detail, particularly its operational services, and detailed the relationship between the programs of the various agencies. The report revealed close cooperation but little evidence of systematic coordination. Based on this study, the Bureau of the Budget issued a set of ground rules to be followed in the coordination process. It established a permanent general philosophy for assignment and assessment of agency roles in the field of meteorology and set certain goals to be achieved by the coordination process. The Bureau of the Budget tasked the Department of Commerce (DOC) to establish the coordinating mechanism in concert with the other federal agencies. It also reaffirmed the concept of having a central agency--the DOC--responsible for providing common meteorological facilities and services and clarified the responsibilities of other agencies for providing meteorological services specific to their own needs.

The implementation of these directives by DOC led to the creation of the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM) which operates with policy guidance from the Federal Committee for Meteorological Services and Supporting Research. The principal work in the coordination of meteorological activities and in the preparation and maintenance of federal plans is accomplished by the OFCM staff with the advice and assistance of the Interdepartmental Committee for Meteorological Services and Supporting Research, and over 30 program councils, committees, and working groups.

MISSION AND STAFFING OF THE OFFICE OF THE FEDERAL COORDINATOR FOR METEOROLOGY

The mission of the OFCM is to ensure the effective use of federal meteorological resources by leading the systematic coordination of operational weather requirements and services, and supporting research, among the federal agencies. To discharge its mission, OFCM has has meshed its objectives with the objectives of the agencies that provide the services and perform the research.

These objectives include:

- Documenting agency programs and activities in a series of national plans and reports that enable agencies to revise/adjust their individual ongoing programs and provide a means for communicating new ideas and approaches to fulfill requirements.
- Providing structure and programs to promote continuity in the development and coordination of interagency plans and procedures for meteorological services and supporting research activities.
- Preparing analyses, summaries, or evaluations of agency meteorological programs and plans that provide a factual basis for the Executive and Legislative branches to make appropriate decisions related to the allocation of funds.
- Reviewing federal weather programs and federal requirements for meteorological services and supporting research. This review may suggest additions or revisions to current or proposed programs, or identify opportunities for improved efficiency, reliability, or cost avoidance through coordinated actions or integrated programs.

DOC currently has ten positions assigned to OFCM. DOC also provides administrative support to OFCM and approximately one-half of OFCM's annual operating budget. The Department of Defense (DOD) currently provides two senior staff officers--one Air Force and one Navy--and contributes approximately one-fourth of the annual operating budget. The Department of Transportation (DOT) Federal Aviation Administration (FAA) provides one professional staff member and also provides approximately one-fourth of the annual operating budget. These three agency representatives are designated Assistant Federal Coordinators for liaison to their respective agencies. In all, 13 meteorologists, oceanographers, physical scientists, and administrative and computer-support personnel are assigned to the OFCM staff.

FEDERAL COMMITTEE FOR METEOROLOGICAL SERVICES AND SUPPORTING RESEARCH

The Federal Committee for Meteorological Services and Supporting Research (FCMSSR), established in 1964, provides policy-level agency representation and guidance to the Federal Coordinator to address agency differences that arise during the coordination of meteorological activities and the preparation of federal plans. The Under Secretary of Commerce for Oceans and Atmosphere, who is also the Administrator of the National Oceanic and Atmospheric Administration (NOAA), serves as the FCMSSR Chair.

The 15 federal agencies that engage in meteorological activities or have a need for meteorological services are represented on FCMSSR. The FCMSSR membership includes: DOC, DOD, DOT, the Departments of Agriculture (USDA), Energy (DOE), Interior (DOI), and State (DOS), and the Environmental Protection Agency (EPA), Federal Emergency Management Agency (FEMA), National Aeronautics and Space Administration (NASA), National Science Foundation (NSF), National Transportation Safety Board (NTSB), Nuclear Regulatory Commission (NRC), the Office of Science and Technology Policy (OSTP), and the Office of Management and Budget (OMB).

HIGHLIGHTS FOR FISCAL YEAR 2000 AND PLANS FOR FISCAL YEAR 2001

NATURAL DISASTER REDUCTION

54th Interdepartmental Hurricane Conference (IHC) (February 14-18, 2000)

OFCM annually hosts the Interdepartmental Hurricane Conference to provide a forum for the responsible federal agencies, together with representatives of the user communities such as emergency management, to review the nation's hurricane forecast and warning program and to make recommendations on how to improve the program in the future. Houston, Texas was chosen as the site for the 54th IHC to commemorate the 100th anniversary of the 1900 hurricane which devastated the Galveston/Houston area. The theme for the conference was "*20th Century Highlights and Prospects for the Future*". An important objective of the conference was to more closely link hurricane operations with ongoing research efforts. Revisions were made to the *National Hurricane Operations Plan* which provides the basis for hurricane reconnaissance and forecast and warning operations for the 2000 season. Workshops included hurricane inland flooding, transitioning research to operations, weather reconnaissance of the future, and improving user community coordination. A ceremony commemorating the 1900 storm was planned in conjunction with the Galveston Historical Foundation and hosted by the Honorable Roger Quiroga, Mayor of Galveston, on Thursday afternoon, February 17, 2000.

1900 Galveston Storm Commemoration

OFCM made arrangements for the Under Secretary of Commerce for Oceans and Atmosphere to participate in the September 8-9, 2000, commemoration of the 1900 Galveston Storm. Dr. D. James Baker is an honored guest and will provide greeting remarks at the September 8 Centennial Tribute, at which CBS Evening News anchor Dan Rather will deliver the keynote address. Dr. Baker will also participate in the September 9 dedication of the Place of Remembrance Monument at the seawall in Galveston.

Post-Storm Data Acquisition

The OFCM-sponsored Working Group for Natural Disaster Reduction/Post-Storm Data Acquisition coordinated efforts to examine the devastation that resulted from the tornado outbreak that occurred in southwest Georgia in mid-February 2000. Aerial photography support was provided by the Air Force's Civil Air Patrol. The support provided by the Civil Air Patrol, which was negotiated by the working group and documented in a memorandum of understanding, has proven to be both timely and very cost effective.

WEATHER INFORMATION FOR SURFACE TRANSPORTATION (WIST)

The OFCM and United States Department of Transportation - Federal Highway Administration (USDOT-FHWA) co-sponsored "*Symposium on Weather Information for Surface Transportation: Delivering Improved Safety and Efficiency for Tomorrow*" was held November 30 - December 2, 1999, at the Holiday Inn, Silver Spring, Maryland. This first event of its kind was attended by more than 120 individuals, an unprecedented cross-section of the transportation and weather communities (federal government, states and cities, urban and rural transportation agencies, professional and trade organizations, and government and commercial weather service providers). Keynote speakers were Dr. Stephen Van Beek, Associate Deputy Secretary of Transportation, and Dr. D. James Baker, Under Secretary of Commerce for Oceans and Atmosphere and FCMSSR Chairman. The goal of the symposium was to establish the national needs and

requirements for weather information associated with decision-making actions involving surface transportation. Significant progress was made towards this goal, and an initial draft of a requirements document will be completed Fall 2000. A second WIST Symposium is planned for December 4-6, 2000, in Rockville, Maryland. The second WIST Symposium will focus on (a) refinement of WIST requirements, (b) identifying "who can do what today," and (c) initial discussions on a National Weather Information System for Surface Transportation. In addition to previous attendees, OFCM anticipates increased attendance from government and commercial weather service providers, state and municipal DOTs and transit authorities, and other interested parties within the Intelligent Transportation Society (ITS) community.

AVIATION WEATHER FORUM

The OFCM and United States Department of Transportation - Federal Aviation Administration (USDOT-FAA) co-sponsored user forum "*Aviation Weather: Opportunities for Implementation*" was held July 25-26, 2000, at the Bethesda Ramada Hotel and Conference Center, Bethesda, Maryland. The forum brought together key government agency representatives, as well as a cross section of professionals representing commercial, business, and general aviation; the forum dynamics clearly demonstrated unanimous interest in aviation safety, efficiency and effectiveness for the benefit of all. The forum focused on five major areas common to National Aviation Weather Initiatives. They are: product development; product dissemination; cockpit multifunctional displays; training; and decision support systems. Reports were given on work being done in eight service areas identified by the aviation community, including: ceiling and visibility; convective hazards; en route winds and temperatures; ground de-icing and anti-icing; in-flight icing; terminal wind and temperature hazards; turbulence; and volcanic ash and other airborne hazardous materials. Keynote speakers were Mr. Peter H. Challan, Deputy Associate Administrator for Air Traffic Services, FAA, and Mr. Scott B. Gudes, Deputy Under Secretary for Oceans and Atmosphere, Department of Commerce. The goal of the forum was to highlight work accomplished, identify opportunities for immediate or near-term implementation, and assess where user and industry efforts are helping government agencies achieve the National Aviation Weather Program objectives.

WORKSHOP ON MULTISCALE ATMOSPHERIC DISPERSION MODELING WITHIN THE FEDERAL COMMUNITY

The OFCM sponsored "*Workshop on Multiscale Atmospheric Dispersion Modeling within the Federal Community"* was held June 6-8, 2000, at the Town Center Hotel, Silver Spring, Maryland. The workshop was attended by over fifty participants who represented nine federal agencies involved in dispersion modeling. The requirements for dispersion modeling within the federal government are derived from various agency missions including emergency response, national security, public health, and transportation safety that respond to events with both natural and human causes. Such events as volcanic ash, chemical, biological and nuclear releases, pollution, and smoke from forest fires represent potential threats to the health and well being of the population and are of concern to both emergency managers and government officials. The goal of the workshop was to bring users and developers of dispersion models together to improve the coordination in the development and operational use of dispersion models. This workshop provided an opportunity to assess the current state of dispersion modeling and to identify barriers that need to be overcome in order to meet the wide range of requirements.

SPACE WEATHER

Space weather refers to conditions on the sun and in the solar wind, magnetosphere, ionosphere, and thermosphere that can influence the performance and reliability of space-borne and ground-based technological systems, and can endanger human life or health. Space weather storms can cause disruption of satellites, communications, navigation, and electric power distribution grids. The overarching goal of the National Space Weather Program, which is managed by an OFCM program council, is to achieve an active, synergistic, interagency system to provide timely, accurate, and reliable space weather warnings, observations, specifications, and forecasts within the next ten years. The National Space Weather Program Strategic Plan outlined a strategy to guide the planning and implementation of the National Space Weather Program. During FY 2000 OFCM space weather groups prepared a second edition of the *National Space Weather Program Implementation Plan*. It was developed concurrently with the National Security Space Architect's Space Weather Architecture and describes the linkage to and incorporation of that architecture into the National Space Weather Program. It also builds on the previous Implementation Plan and reports on the significant accomplishments in research, operations, technology transition, education, and outreach. The Plan also updates the program's timelines and offers specific recommendations to carry the program forward.

IMPLEMENTATION OF COORDINATING INFRASTRUCTURE

OFCM completed the restructuring of the interagency coordinating

process which has reduced the number of groups and results in a better fit with agencies' perspectives and 21st Century focus areas and priorities. The Federal and Interdepartmental Committees for Meteorological Services and Supporting Research continue to provide policy and program guidance to OFCM, which will address the most important cross-cutting issues and support those initiatives where the end value has a clear societal benefit. The National Space Weather and National Aviation Weather Program Councils remain the same. The standing committees have become: Environmental Services, Operations and Research Needs; Climate Monitoring and Services; Operational Processing Centers; Integrated Observing Systems; Environmental Information Systems and Communications; and Cooperative Research. Working Groups have been reduced in number and cover broader areas, and Joint Action Groups are established as needed for limited periods of time to focus on specific issues. Implementation included identifying Chairpersons and members for OFCM's groups to get stronger participation from many agencies, identifying important issues, and arranging for meetings of the interagency groups. Terms of References are being finalized. The expanded responsibilities of the office include high pay-off areas such as natural disaster reduction, aviation safety, urban meteorology and air quality, marine and ocean environmental services, weather support to surface transportation, climate services, radio spectrum policy, information dissemination technologies, integrated observing systems, and ensuring a long-term climate record.

NATIONAL HURRICANE CONFERENCE

OFCM worked with the National Weather Service to organize a panel on "*Improving Public Response to Hurricane Warnings*" for the April 17-21, 2000, National Hurricane Conference in New Orleans, Louisiana. The purpose of the panel was to elicit suggestions from the panel members and the conference attendees on how to improve public response. These suggestions will be used to improve current and future hurricane operations. The panel encouraged cross-cutting participation by several conference groups (meteorology, emergency management, universities, media, Red Cross, insurance companies, etc.). Areas covered include societal response/behavioral aspects, communications, education, and public outreach. Recommendations for follow-on work included areas such as societal vulnerability mapping, focusing on education, delivering a frequent and consistent message to the public, assessing what is being done and what is needed to improve public response, working on communications issues, and adopting a standard for communications with the public. Dr. D. James Baker, Under Secretary of Commerce for Oceans and Atmosphere, was a keynote speaker for the National Hurricane Conference. OFCM arranged for Dr. Baker to be first on the agenda for the General Session kick-off.

NATIONAL RESEARCH COUNCIL/NATIONAL ACADEMY OF SCIENCES

Joint Meeting of the Federal Committee for Meteorological Services and Supporting Research (FCMSSR) and National Research Council/National Academy of Sciences Board on Atmospheric Sciences and Climate (BASC)

The first joint meeting between FCMSSR and BASC was held October 25, 1999, at the National Academy of Sciences Main Building on Constitution Avenue, Washington, D.C. The meeting was co-chaired by Dr. D. James Baker, Under Secretary of Commerce for Oceans and Atmosphere and FCMSSR Chairman, and Dr. Eric J. Baron, Professor at Pennsylvania State University and Co-chair of BASC. The meeting provided an opportunity to strengthen ties between the federal meteorological community, academia, and the private sector. It made clear the need for improvements in weather and climate services, the importance of transitioning research to operations, and the need to do more to capture the socio-economic value of weather, climate, and environmental information services. FCMSSR and BASC attendees agreed that the meeting was very valuable. Actions are being worked on and will be reported at the upcoming November 14, 2000, FCMSSR meeting, which will be attended by the Co-chair and Director of BASC. The August 8-11, 2000, BASC Summer Study on Climate Services at Woods Hole, Massachusetts, was a result of the joint FCMSSR/BASC meeting.

BASC 21st Century Report Recommendation--A Strategy for Atmospheric Information

OFCM is planning a workshop to respond to and address Leadership and Management Recommendation 1 of the BASC report *The Atmospheric Sciences Entering the Twenty-First Century*, which states: "The Federal Coordinator for Meteorological Services and Supporting Research should lead a thorough examination of the issues that arise as the national system for providing atmospheric information becomes more distributed. Key federal organizations, the private sector, academe, and professional organizations should all be represented in such a study and should help develop a strategic plan." Important issues include: What criteria should govern the design of an optimal atmospheric information system? Should the government seek to recover costs of observations from the public by mechanisms

other than taxes? Who is to be responsible for forecasts for critical activities such as agriculture and aviation? Should federal agencies be responsible for supporting research to improve forecasts for such critical activities? What is the appropriate role for academic research, both basic and applied, in such an evolving weather information system, and how should such research be supported so that it remains vigorous and contributes to national goals?

COMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

OFCM continued to develop its interactions with the Committee on Environment and Natural Resources (CENR) Subcommittee on Natural Disaster Reduction (SNDR). OFCM senior meteorologist staff participated in meetings of SNDR throughout the year. And OFCM and SNDR will co-sponsor a workshop on Risk Assessment and Cost-Benefit Analysis in late January or early February 2001. Also, regarding risk assessment, an OFCM senior meteorologist helped conduct a panel session on risk assessment for natural disasters at the 25th Annual Hazards Research and Applications Workshop, July 9-12, 2000, in Boulder, Colorado. An OFCM senior meteorologist will also serve on a two day focus group September 28-29, 2000, at FEMA's Emergency Management Institute in Emmitsburg, Maryland, to help develop a classroom based, upper division college course on "Hazards Risk Assessment."

DEPARTMENT OF ENERGY METEOROLOGICAL COORDINATING COUNCIL

OFCM has continued its close liaison with the DOE Meteorological Coordinating Council (DMCC) whose mission is to coordinate meteorological support and atmospheric research to meet internal DOE objectives. OFCM plans to attend the joint meeting of the Subcommittee on Consequence Assessment and Protective Actions (SCAPA), the DMCC, and the Nuclear Utility Meteorological data User Group (NUMUG) in Las Vegas, Nevada, October 16-20, 2000. During the DMCC portion of the meeting, OFCM will brief on OFCM activities, and results and actions from the OFCM sponsored "*Workshop on Multiscale Atmospheric Dispersion Modeling within the Federal Community"* which was held June 6-8, 2000, in Silver Spring, Maryland.

AMERICAN METEOROLOGICAL SOCIETY AND THE WEATHER CHANNEL FORUM

OFCM participated in the "*Workshop on Policy Issues in Hurricane Preparedness and Response"* developed by the Atmospheric Policy Program of the American Meteorological Society and sponsored by The Weather Channel, June 6-7, 2000, at The National Press Club, Washington, D.C. The workshop considered the following question: What policy changes are needed to produce weather services, media communications, and emergency management decisions that will optimize hurricane preparedness and response? The opening address of the workshop was given by Dr. D. James Baker, Under Secretary of Commerce for Oceans and Atmosphere. An OFCM senior meteorologist briefed the forum on the recent National Hurricane Conference panel on Improving Public Response to Hurricane Warnings to assist the forum's deliberations concerning hurricane response.

AMERICAN METEOROLOGICAL SOCIETY

During FY 2000 OFCM joined eleven leading environmental science and service corporations in supporting undergraduate scholarships in the atmospheric and related oceanic and hydrologic sciences. The scholarships, awarded for the junior and senior years, are designed to encourage outstanding undergraduates to pursue careers in the fields covered by the awards. OFCM plans to continue this support in FY 2001. OFCM also supports American Meteorological Society endeavors by participating in AMS conferences and workshops and other environmental science education and outreach programs.

NATO MEETING

OFCM hosted a meeting of the NATO Military Committee Meteorological Group (MCMG) Working Group for Operations, Plans and Communications (OPC), June 27-30, 2000. MCMG is composed of national representatives and representatives of major NATO Commanders which provides meteorological policy guidance to the Military Committee, the major NATO Commanders, and the NATO nations. OPC addresses planning and operational issues for meteorological support to NATO exercises and operations and develops meteorological communications capabilities and standard procedures for communications and exchanging meteorological data.

PUBLICATIONS AND OFCM'S WEBSITE

The following plans and publications were prepared in hardcopy form and also placed on OFCM's website (*www.ofcm.gov*):

- *The Federal Plan for Meteorological Services and Supporting Research -- Fiscal Year 2000*
- *National Hurricane Operations Plan*

- *The National Space Weather Program: Implementation Plan (2nd Edition)*

- *54th Interdepartmental Hurricane Conference (Minutes)*

- P*roceedings for the Symposium "Weather Information for Surface Transportation: Delivering Improved Safety and Efficiency for Tomorrow"*

- *Proceedings of the "Workshop on Multiscale Atmospheric Dispersion Modeling within the Federal Community"*

- *Proceedings of the Aviation Weather User Forum "Aviation Weather: Opportunities for Implementation"*

The following documents are planned for publication during FY 2001:

- *National Plan for Post-Storm Data Acquisition*

- *A National Framework for Volcanic Ash Hazards to Aviation*

- *The Federal Plan for Meteorological Services and Supporting Research -- Fiscal Year 2001*

- *National Hurricane Operations Plan*

- *55th Interdepartmental Hurricane Conference (Minutes)*

- *Proceedings for 2nd Symposium on Weather Information for Surface Transportation*

- *Proceedings for Risk Assessment and Cost-Benefit Analysis Workshop*

- *Proceedings for Severe Local Weather Workshop*

- P*roceedings for Workshop on BASC 21st Century Report Recommendation -- A Strategy for Atmospheric Information*

During FY 2000, OFCM continued to make substantial progress on its use of the Internet. In addition to information about the office, OFCM has placed its current publications on its website, and keeps the website current with information regarding workshops and symposia being conducted by the office. OFCM will continue to make information available on the Internet during FY 2001.